HIGH RANGE WATER-REDUCING ADMIXTURES MSP-92-09D

1.0 Description. This specification covers the use of high range water-reducing (HRWR) admixtures for fabricating prestressed concrete bridge units (for bridge superstructure) in accordance with Sec 705, at the fabricator's option and when approved by the engineer.

2.0 Approval. Prior to the use of a HRWR, the fabricator shall submit a request and the manufacturer's certification to the engineer.

2.1 The request shall designate the proposed concrete mixture, the brand and dosage rate of HRWR proposed for use, and the design slump.

2.2 A manufacturer's certification shall be furnished from an authorized representative of the HRWR stating that the admixture being furnished is considered to be compatible with the other admixtures (i.e., air entrainment, retarder, accelerator, etc., by brandname) being used in the mixture. Any changes in sources require a re-submittal of the certification.

3.0 Materials.

3.1 Water Reducer. The HRWR shall be one previously approved for use in accordance with Sec 1054.

3.2 Concrete Mixture. The concrete shall meet Sec 501 for the Class specified, except as noted herein.

3.2.1 The minimum water-cement ratio shall not be less than 0.25 (pounds of water per pound of cement)(kilograms of water per kilograms of cement), and the maximum allowed gallons (liters) of water for the mixture shall be reduced by 15 percent for concrete mixtures with HRWR.

3.2.2 The air content shall be 6 percent, plus 2 percent or minus 1 1/2 percent for concrete mixtures with HRWR.

3.2.3 The allowed slump shall be that specified by the contractor, plus or minus 2 inches (50 mm), but in no case shall the slump exceed 8 inches (200 mm).

3.2.4 The liquid portion of the HRWR shall be included in the mix water.

4.0 Construction.

4.1 The HRWR may be added at the plant or on the casting site. If added after the initial mixing sequence, the mixer shall be turned an additional 30 revolutions or more as necessary to accomplish uniform mixing.

4.2 After the addition of the HRWR, no reconditioning of the concrete mixture by adding any kind of material will be permitted. If the batch of concrete loses its slump and cannot be satisfactorily consolidated into the forms, the batch will be rejected.

4.3 All bridge superstructure beam units in the same span shall be cast either using the HRWR or not using it. No mixing of units will be allowed.